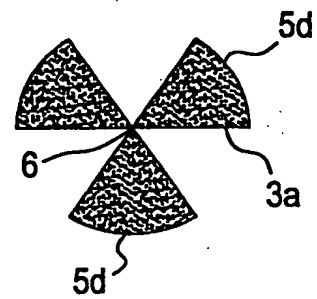




FIG. 4



This schematic diagram illustrates a laser system for a lithographic mask. A laser beam, represented by a dashed line with an arrow, originates from a source on the left and is directed through a series of four horizontal mirrors. The beam then enters a large rectangular chamber containing a cylindrical component labeled 8. To the right of the cylinder is a dashed rectangular box labeled 12, which is connected to the cylinder by a double-headed arrow, indicating a reciprocal relationship or interaction. Below the main chamber, a vertical dashed line leads to a detailed view of the beam's interaction with a mask. In this view, the beam passes through a mask structure, which includes a semi-circular component on the left and a rectangular component on the right. The beam is shown as a series of parallel lines, indicating its profile as it passes through the mask. A small, stylized symbol is located to the right of the mask assembly.

FIG. 6

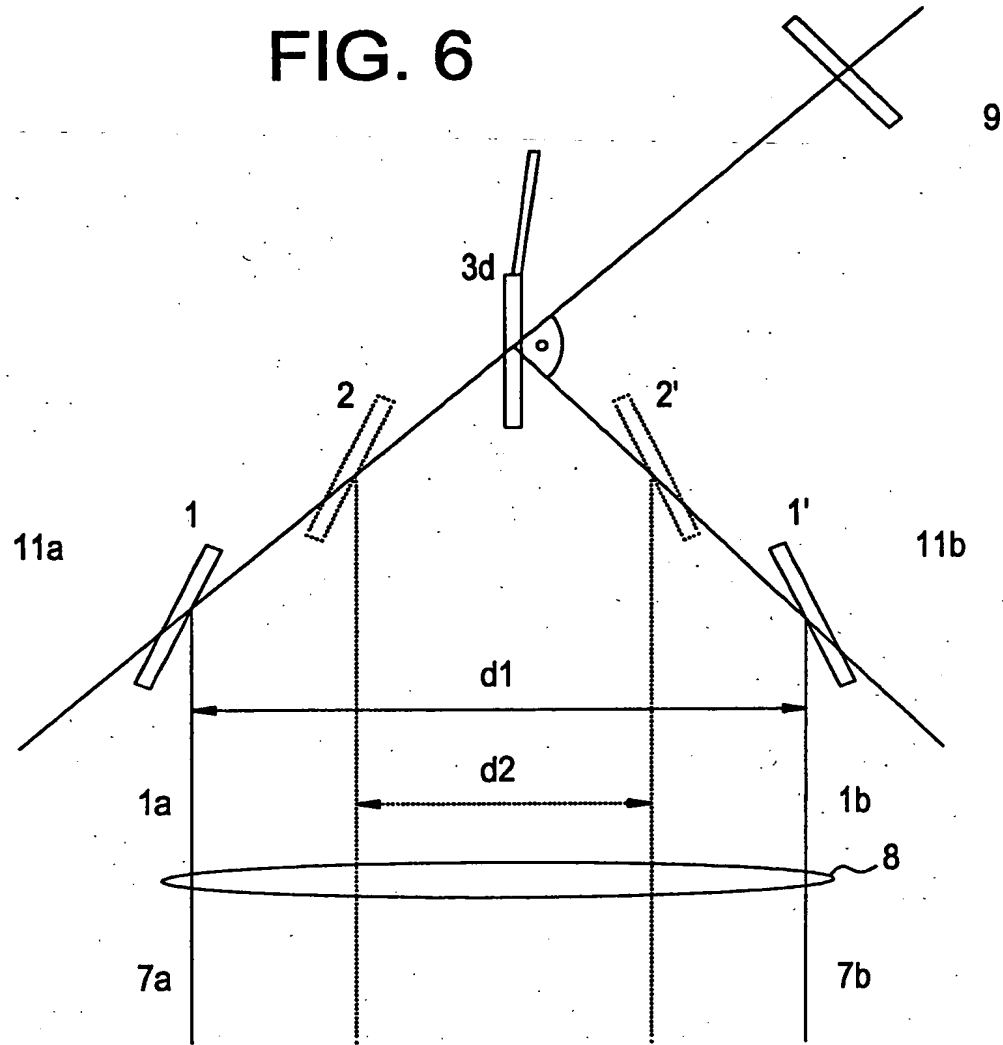


FIG. 7

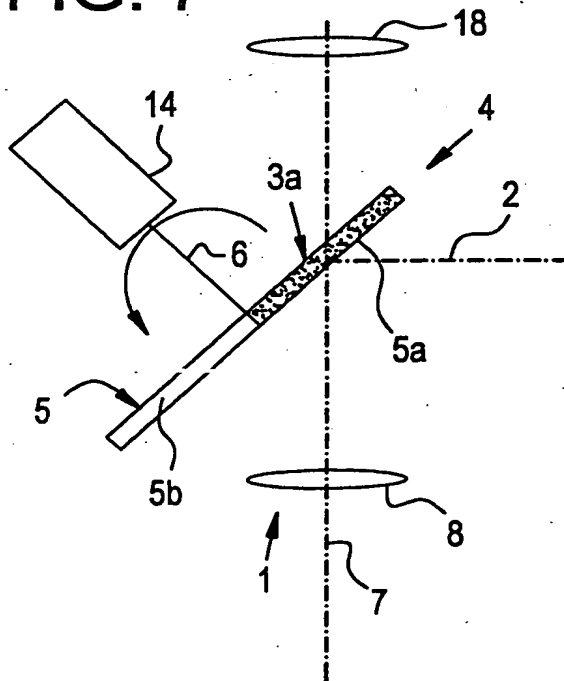
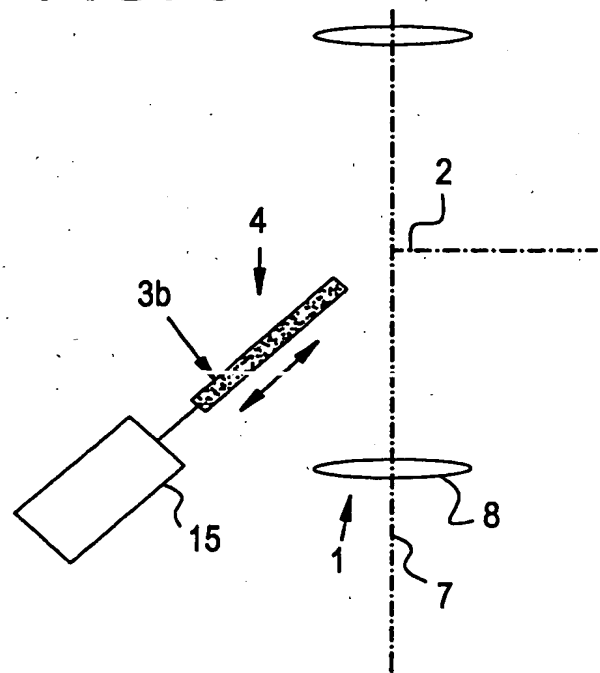


FIG. 8



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	

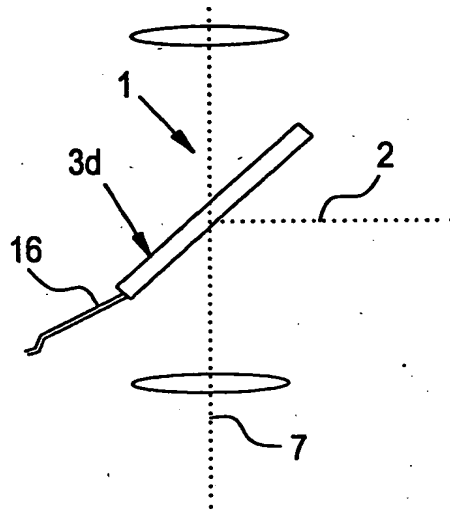


FIG. 10

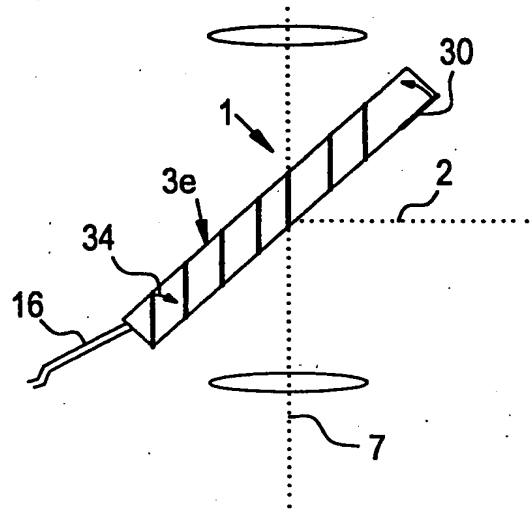


FIG. 11

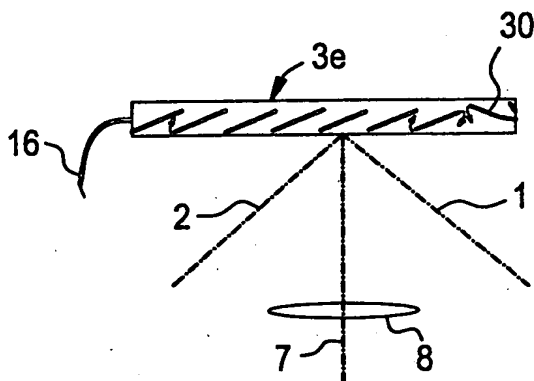


FIG. 12

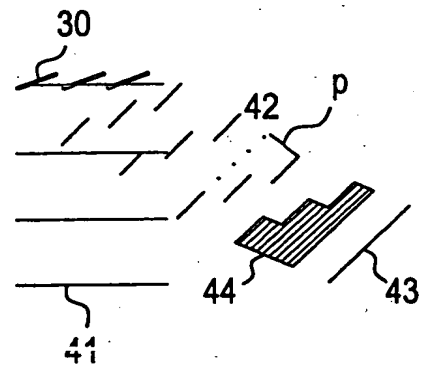


FIG. 13

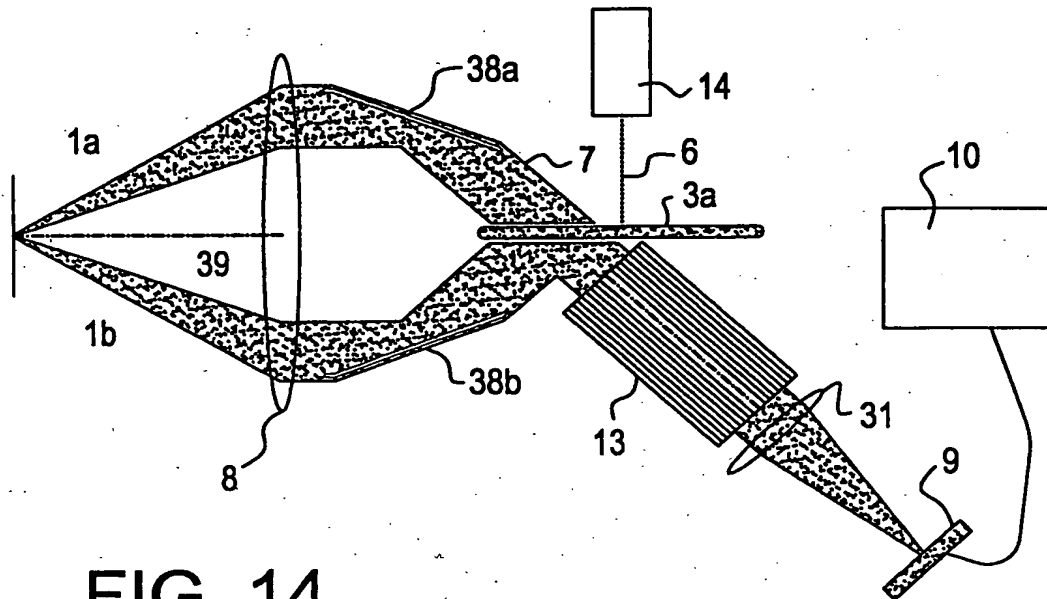


FIG. 14

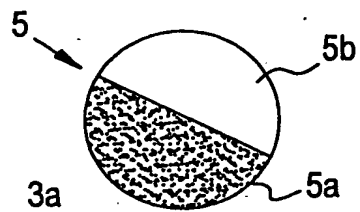


FIG. 15

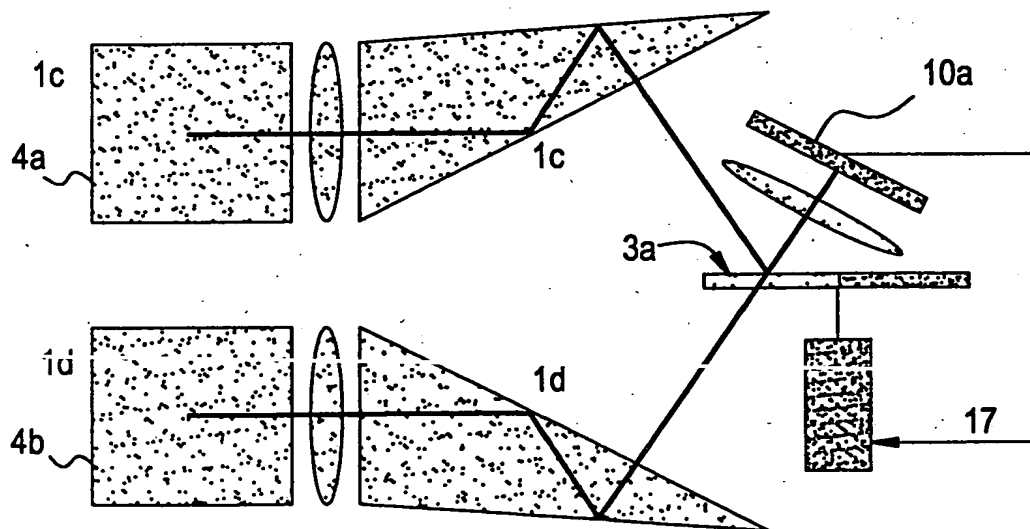


FIG. 16

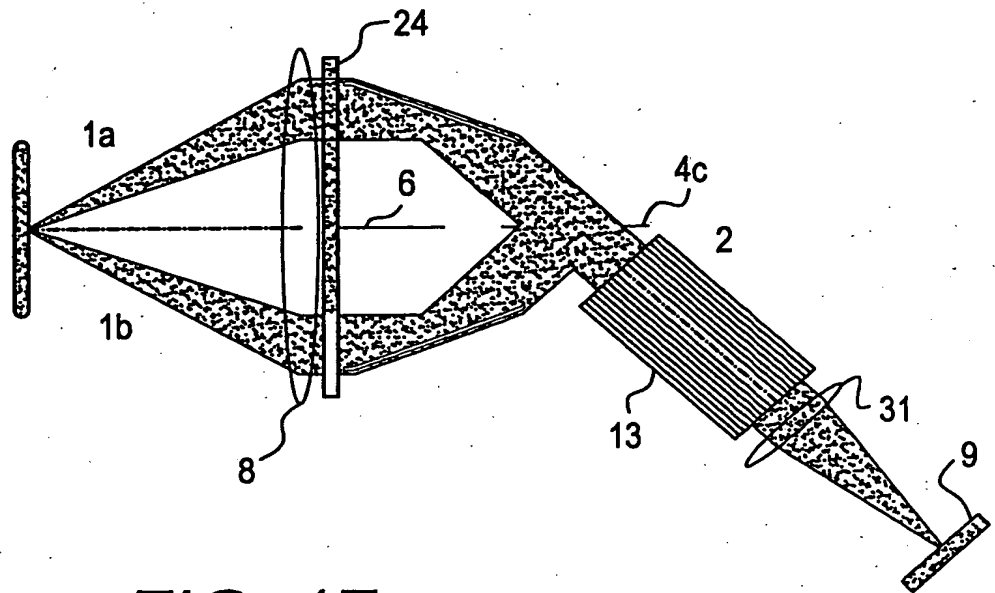


FIG. 17

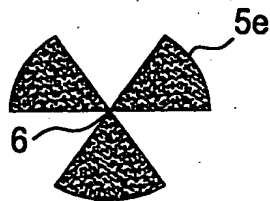


FIG. 18

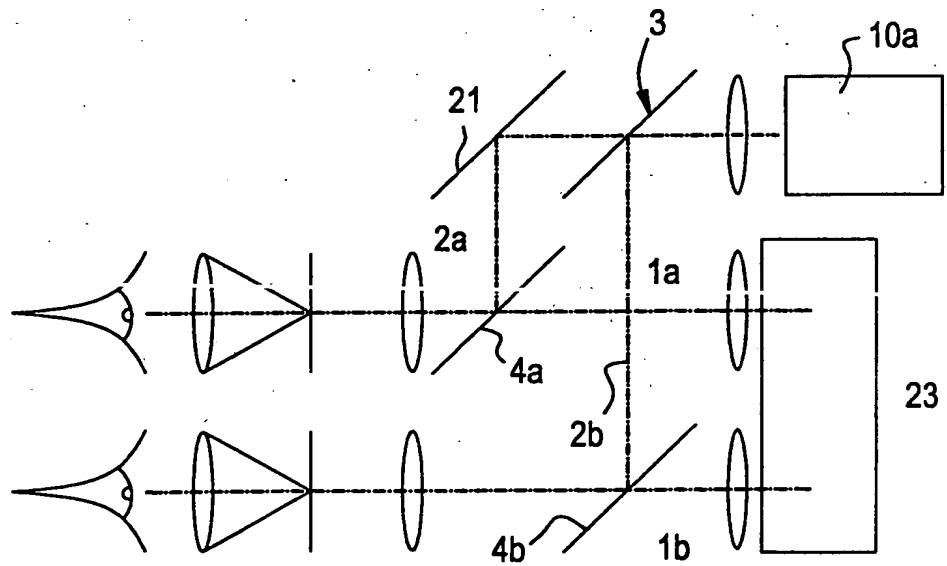


FIG. 19

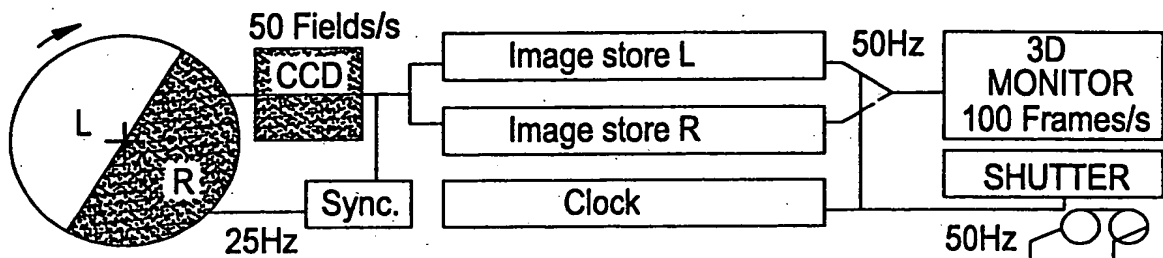


FIG. 20

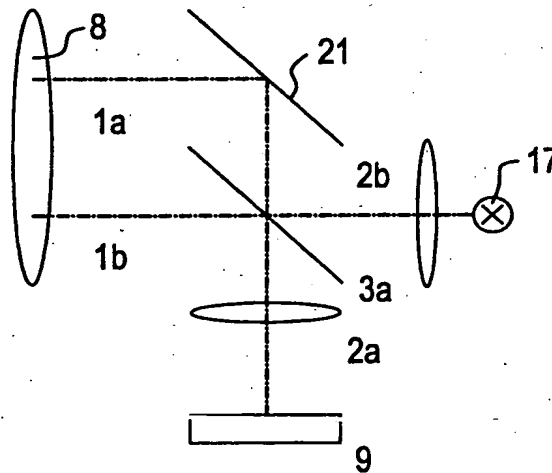


FIG. 21

1) Arrangement having polarization for encoding the left and right beam paths:

Left	Right	
1.0 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	1.0 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	100% UNPOLARIZED OBJECT LIGHT
\otimes $\frac{0.5s \cdot 0.84}{0.42s}$	\longleftrightarrow $\frac{0.5p \cdot 0.84}{0.42p}$	POLARIZATION and effectiveness τ linearly s- and p- polarized light
$\frac{0.5}{0.21s}$	$\frac{0.5}{0.21p}$	BEAM COMBINATION BY 50/50 SPLITTER combined s- and p- beams
$\frac{0.84 \cdot 0.5}{0.09s}$	$\frac{0.84 \cdot 0.5}{0.09p}$	PERIODIC S- AND P- ANALYZER and time factor
<u>0.09s</u>	<u>0.09p</u>	<u>Light on the detector (CCD)</u>

2) Arrangement having reflection aperture diaphragms for the consecutive switching of the left and right beam path:

Left	Right	
1.0 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	1.0 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	100% OBJECT LIGHT
$\frac{1.0 \cdot 0.5}{0.5}$	$\frac{1.0 \cdot 0.5}{0.5}$	BEAM COMBINATION BY ROTATING MIRROR and time factor
<u>0.5</u>	<u>0.5</u>	Combined beam = <u>Light on the detector (CCD)</u>

3) Relation of 1) to 2):

Improvement:

$$0.5 / 0.09 = 5.5$$

Note:

Serial sampling is used in both solutions.

FIG. 22

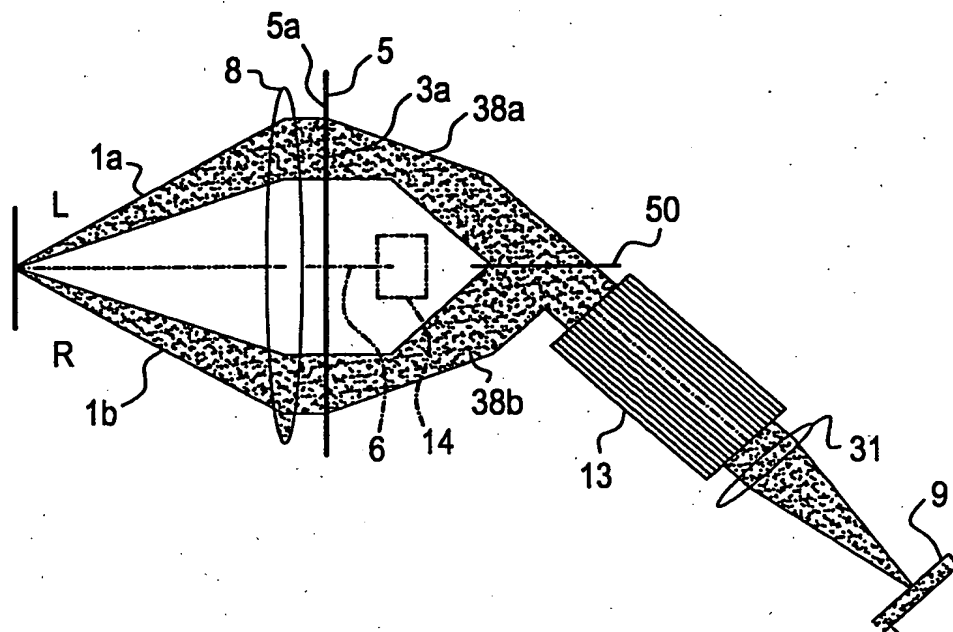
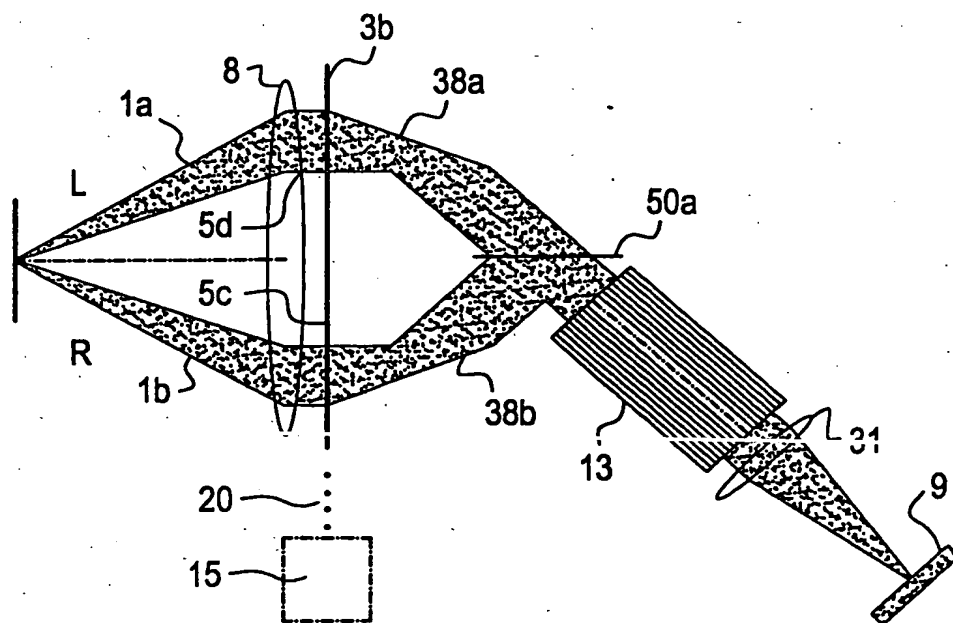


FIG. 23



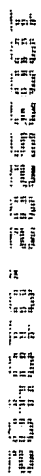
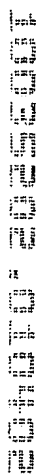
[illegible][illegible]

FIG. 26

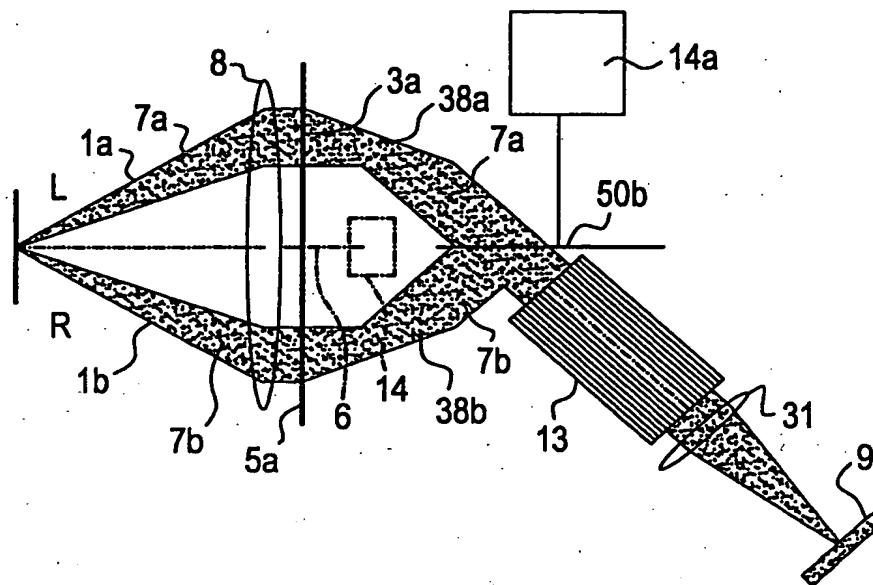


FIG. 27

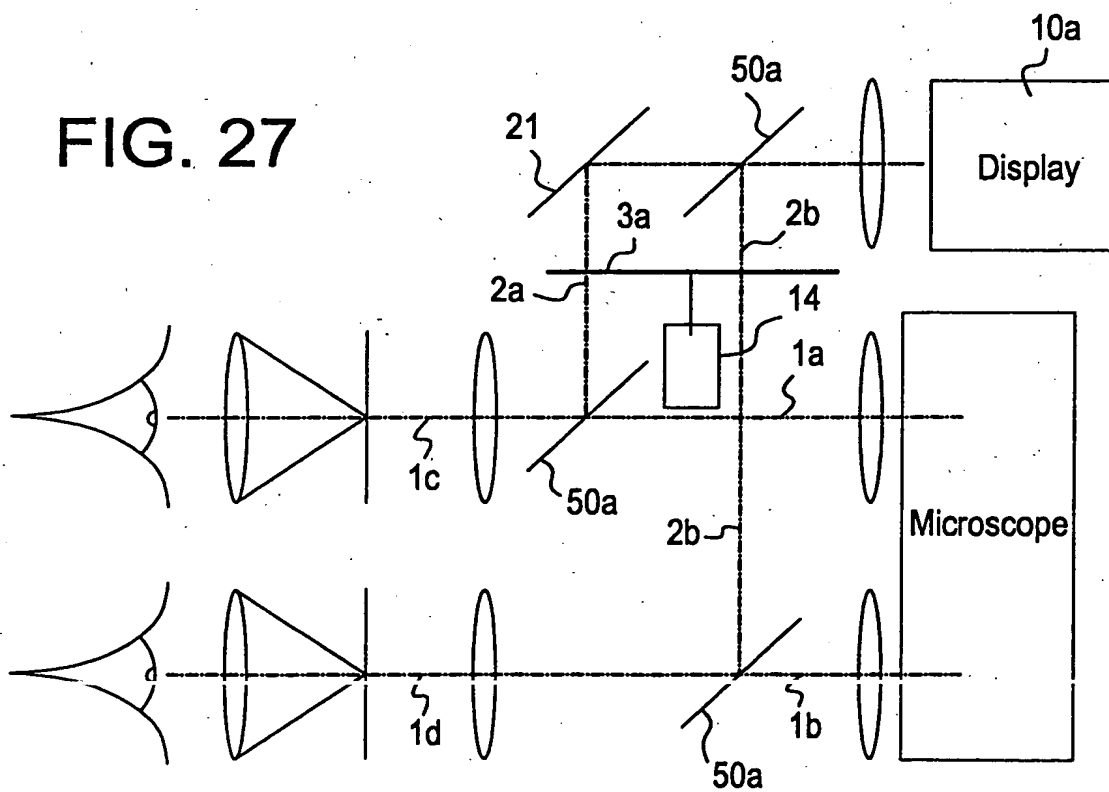


FIG. 28

